



Minnesota Ag News – Chemical Use

Spring Wheat: Fall 2017

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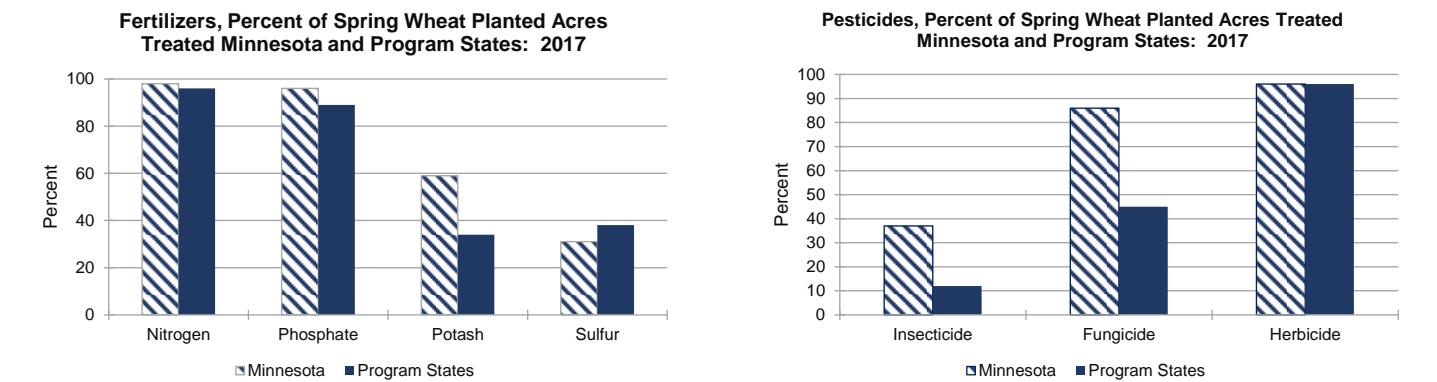
The 2017 Agricultural Chemical Use Survey of spring wheat producers collected data about fertilizer and pesticide use as well as pest management practices in growing spring wheat.

Fertilizer Use

Fertilizer refers to a soil-enriching input that contains one or more plant nutrients, primarily nitrogen (N), phosphate (P₂O₅), and potash (K₂O). Of the three primary macronutrients, nitrogen was the most widely used on spring wheat planted in Minnesota according to the latest USDA, National Agricultural Statistics Service – *Agricultural Chemical Use* report. Farmers applied nitrogen to 98 percent of planted acres at an average rate of 118 pounds per acre per year. Macronutrients phosphate and potash were applied to 96 and 59 percent of acres, respectively. The secondary macronutrient, sulfur, was applied to 31 percent of acres planted to spring wheat.

Pesticide Use

The pesticide active ingredients used on spring wheat are classified in this report as herbicides (targeting weeds), insecticides (targeting insects), fungicides (targeting fungal disease) and other chemicals (targeting all other pests and other materials, including extraneous crop foliage). Herbicide active ingredients were applied to 96 percent of the spring wheat acres planted. Tebuconazole was the most widely used pesticide overall, with 67 percent of spring wheat acres treated with the fungicide. Fungicide and insecticide active ingredients were applied to 86 percent and 37 percent of spring wheat acres planted, respectively.



	Minnesota			Program States ¹		
	Planted acres treated (%)	Rate applied per year (pounds per acre)	Total pounds applied (1,000 pounds)	Planted acres treated (%)	Rate applied per year (pounds per acre)	Total pounds applied (1,000 pounds)
Fertilizer Use on Spring Wheat						
Nitrogen	98	118	134,300	96	98	984,500
Phosphate	96	47	52,300	89	40	367,700
Potash	59	37	25,200	34	21	73,900
Sulfur	31	11	4,000	38	11	45,400
Pesticide Use on Spring Wheat by Active Ingredient						
FUNGICIDE:						
Fluxapyroxad	10	0.025	3	3	0.025	9
Propiconazole	57	0.092	61	30	0.086	268
Prothioconazole	47	0.085	46	13	0.082	113
Pyraclostrobin	14	0.056	9	6	0.056	32
Tebuconazole	67	0.096	74	22	0.094	214
TOTAL FUNGICIDE ²	86		199	45		692
HERBICIDE:						
Bromoxynil Heptan.	21	0.117	28	10	0.113	114
Bromoxynil Octanoate	46	0.197	105	34	0.173	611
Clopyralid Mono Salt	29	0.087	30	32	0.077	253
Flucarbazone-Sodium	15	0.025	4	12	0.021	27
Fluroxypyr 1-MHE	34	0.091	36	46	0.083	401
Glyphosate Iso. Salt	5	0.625	36	37	0.845	3,245
Glyphosate Pot. Salt	6	0.923	69	18	1.192	2,202
MCPA, 2-Ethylhexyl	46	0.311	164	23	0.277	674
Methanone	18	0.033	7	21	0.028	60
Pinoxaden	17	0.079	15	10	0.059	59
Thifensulfuron	36	0.013	5	18	0.013	24
Tribenuron-Methyl	38	0.005	2	20	0.015	33
TOTAL HERBICIDE ²	96		538	96		9,433
INSECTICIDE:						
Lambda-Cyhalothrin	33	0.016	6	9	0.017	16
TOTAL INSECTICIDE ²	37		16	12		69

¹ The 8 program states surveyed about spring wheat in the 2017 ARMS were California, Idaho, Minnesota, Montana, North Dakota, Oregon, South Dakota, and Washington.
² Total Fungicide, Herbicide and Insecticide includes pesticides that are not listed in this table. Pesticides were not listed if data were withheld to avoid disclosing data for individual operations, or the total was less than half the rounding unit.

Pest Management Practices: Scouting for weeds was the top pest management practice for the spring wheat acreage in Minnesota.

Pest Management Practices	Minnesota		Program States ¹	
	% of area planted	% of operations	% of area planted	% of operations
Avoidance				
Crop or plant variety chosen for specific pest resistance	19	15	39	39
Planting locations planned to avoid cross infestation of pests	47	43	21	20
Planting or harvesting dates adjusted	24	26	19	18
Rotated crops during past 3 years	94	95	87	86
Row spacing, plant density, or row directions adjusted	16	16	17	14
Monitoring				
Diagnostic laboratory services used for pest detection via soil or plant tissue analysis	16	11	9	7
Field mapping data used to assist decisions	38	28	16	14
Scouted -				
-established process used	49	45	23	21
-for pests due to a pest advisory warning	32	26	9	9
-for pests due to a pest development model	34	30	14	12
-for pests or beneficial organisms-not scouted	(Z)	3	2	3
-for pests or beneficial organism by conducting gen. observations while performing routine tasks	7	13	21	21
-for pests or beneficial organism by deliberately going to the crop acres or growing areas	93	84	77	76
Scouted for diseases	94	86	84	79
-by employee	1	1	1	1
-by farm supply company or chemical dealer	23	18	10	8
-by independent crop consultant or commercial scout	26	24	17	16
-by operator, partner, or family member	50	57	73	76
Scouted for insects & mites	94	88	82	77
-by employee	1	1	1	1
-by farm supply company or chemical dealer	19	15	10	8
-by independent crop consultant or commercial scout	24	23	17	16
-by operator, partner, or family member	55	61	72	76
Scouted for weeds	100	97	98	96
-by employee	1	1	1	1
-by farm supply company or chemical dealer	33	28	9	7
-by independent crop consultant or commercial scout	24	21	15	13
-by operator, partner, employee, or family member	55	63	75	79
Weather data used to assist decisions	85	74	65	64
Written or electronic records kept to track pest activity	71	56	42	38
Prevention				
Beneficial insect or vertebrate habitat maintained	6	10	8	9
Crop residues removed or burned down	11	9	12	12
Equipment & implements cleaned after field work to reduce spread of pests	44	37	57	54
Field edges, ditches, or fence lines were chopped, sprayed, mowed, plowed, or burned	60	55	45	47
Field left fallow previous year to manage insects	0	0	1	(Z)
Flamer used to kill weeds	0	0	1	1
No-till or minimum till used	36	35	80	76
Plowed down crop residue using conventional tillage	34	41	24	28
Seed treated for insect or disease control after purchase	59	47	49	46
Water management practices used	0	0	3	3
Suppression				
Beneficial organisms applied or released	0	0	(Z)	(Z)
Biological pesticides applied	0	0	(Z)	1
Buffer strips or border rows maintained to isolate organic from non-organic crops	4	5	4	4
Floral lures, attractants, repellants, pheromone traps, or biological pest controls used	0	0	0	0
Ground covers, mulches, or other physical barriers maintained	47	43	51	53
Pesticides with different mechanisms of actions to keep pest from becoming resistant to pesticides	41	31	42	38
Scouting data compared to published information to assist decisions	50	37	26	24
Trap crop grown to manage insects	0	0	0	0

(Z) Less than half the rounding unit.
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